

Referring now to Figures 18 and 19, the preferred embodiment of the present invention includes a ball nut and method for producing a ball nut 10 having at least one internal bearing race with a first end and a second end. At least one recirculating crossover passage 18 connects the first end with the second end of the helical groove portion 16 to form a continuous recirculating path 12 for a plurality of ball bearings 14. The method according to the preferred embodiment of the present invention includes forming an eyelet 40 with a helix passage 42 for receiving a plurality of ball bearings 44 in a flange end 46. A crossover passage 48 is defined in the flange end 46, such that the crossover passage 48 is in communication with the helix passage 42 for returning the plurality of ball bearings 44 from one end of the helix passage 42 to an opposite end of the helix passage 42. Two eyelets 40 are assembled in flange-to-flange relationship with respect to one another to define at least one raceway having a single recirculating rotational path 50 for receiving the plurality of ball bearings 44. The method according to the present invention can also include the step of over molding the assembled eyelets 40 to provide a unitary ball nut. Preferably, the eyelets 40 in the assembling step are identical to one another. The forming step can include the steps of drawing an eyelet 40, and coining the helix passage 42 and the crossover passage 48 in the flange 46 of the eyelet 40. The assembling step can also include the step of temporarily holding the two eyelets 40 with respect to one another with a lock member 52. The forming step can define at least one tab 54 on the flange end 46 of the eyelet 40 to define the lock member 52. The assembling step can include inserting the plurality of ball bearings 44 within the helix passage 42 and the crossover passage 48 during the assembling step. A punch or diverter 56 in the helix passage 42 can be provided to direct ball bearings 44 into the crossover passage 48. Preferably, the eyelet is formed of a metal material selected from the group including steel, hardened steel, melonited steel, heat treated steel, stainless steel, spherodized stainless steel, annealed stainless steel and the heat treated stainless steel. Preferably, the eyelet is hardened to approximately 62 R_c after the forming process.

According to the preferred embodiment of the present invention, a drawn eyelet 40 is formed with a helix passage 42 in the flange end 46, and a